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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,817	11/24/2003	Abhay Sudhakar Rao Kant	133918-1	5358

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EXAMINER

LAU, TUNG S

ART UNIT PAPER NUMBER

2863

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/720,817

Applicant(s)

KANT ET AL.

Examiner

Tung S. Lau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 51-58, 60 and 61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 51-58, 60 and 61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u>11/1/2006</u> |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/20/2006 has been entered.

Drawings Objection

2. The drawings are objected to under 37 CFR 1.84 (o)(n) which requires legends on drawings in figure 1 the generic block 10 should be provided with descriptive labels (e.g. software protocol, transmitter, frequency hopper, receiver, etc), correction is required.

Specification objections

3. The abstract is object because it contains improper legal phraseology, and contains the title of the invention.

'Comprises' is an improper legal phraseology often used in patent claims and should be avoided. (MPEP 608.01(b) [R-3])

The heading on the abstract should only read 'Abstract' or 'Abstract of the Disclosure'. Correction is required. See MPEP 608.01(b).

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Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited See 37 CFR 1.72(b) and MPEP § 608.01(b). The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," "means" and "said," etc, should be avoided.

Claim Rejections - 35 USC § 101

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 101 that form the basis for the rejections under this section made in this Office action:

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 3, 4, 56-58 and 60-61 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In claim 3, the method for detecting a rub condition in a turbomachine by monitoring and determining. These claims appear to merely describe data transformation and lack of concrete and tangible result. In claim 4, the storage medium encode with a machine-readable program code for detecting a rub condition in a turbomachine by obtaining and determining. These claims appear to merely describe data transformation and lack of concrete and tangible result. In claim 56, the method by analyzing turbomachine operation data to detect a rub condition. These claims appear to merely describe data transformation and lack of concrete and tangible result.

The practical application of the claimed invention cannot be realized until the information determined is conveyed to the user. For the result to be tangible it would need to output to a user or stored for later use. Hence the claims are treated as nonstatutory functional descriptive material (See MPEP § 2106 and OG Notices: 22 November 2005, Guidelines for Subject Matter Eligibility,

<http://www.uspto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm>

See MPEP 2106 IV B (1) (b).

For instance in claim 3, the method steps of monitoring and determining are data manipulation. This fails to present a concrete, tangible useful result. An example of a concrete, tangible useful result may include

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displaying, storing for further use, generating a control signal etc. of the determining. In claim 4, a storage medium of obtaining and determining are data manipulation. This fails to present a concrete, tangible useful result. An example of a concrete, tangible useful result may include displaying, storing for further use, generating a control signal etc. of the determining. In claim 56, the method steps of analyzing are data manipulation. This fails to present a concrete, tangible useful result. An example of a concrete, tangible useful result may include displaying, storing for further use, generating a control signal etc. of the determining. The applicant should review the disclosure to determine what type of tangible result is being carried out in this instant application and such limitation be included in the claim. For further guidance see <http://www.uspto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm>

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

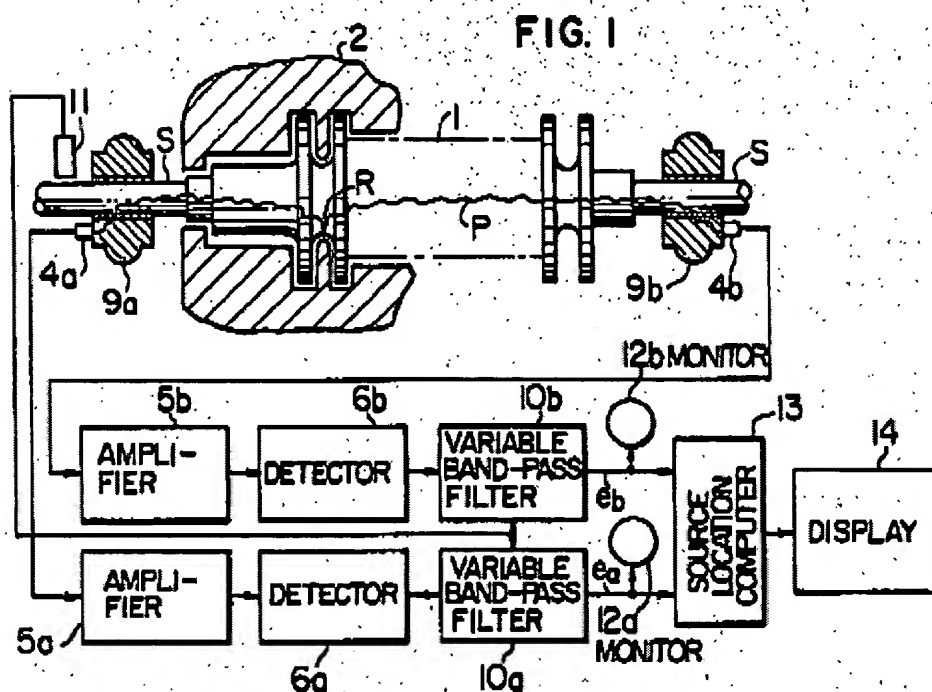
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, and 51-58, 60 and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by Sato et al. (U.S. Patent 4,478,082).

Regarding claim 1:

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Sato discloses a system for detecting a rub in a turbomachine comprising:
 a turbomachine (Col. 1, Lines 35-39); sensors (fig. 1, unit 4a, 4b)
 monitoring turbomachine conditions (fig. 1, unit 6a, 6b), and an on site
 monitor in communication with the sensors (fig. 2, unit 14), and loaded
 with instructions to implement a method for detecting whether a rub is
 occurring in the turbomachine (fig. 2).



Regarding claim 3:

Sato discloses a method for detecting a rub (fig. 2) in a turbomachine (Col. 1, Lines 35-39), the method comprising: monitoring turbomachine conditions (fig. 2), and determining whether a rub is occurring (fig. 2).







Regarding claim 4:

Sato discloses a storage medium encoded with a machine-readable computer program code (fig. 1, unit 13) for detecting whether a rub is

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occurring in a turbomachine (fig. 2, Col. 1, Lines 35-39), the storage medium including instructions for causing a computer to implement a method (fig. 1, unit 13) comprising: obtaining data indicating turbomachine conditions (fig. 2, Col. 1, Lines 35-39); and determining whether a rub is occurring (fig. 2).

FIG. 2

RUBBING OUTPUT WAVEFORM	ABSENT	PRESENT
(a) AMPLIFIER		
(b) DETECTOR		
VARIABLE (c) BAND-PASS FILTER		

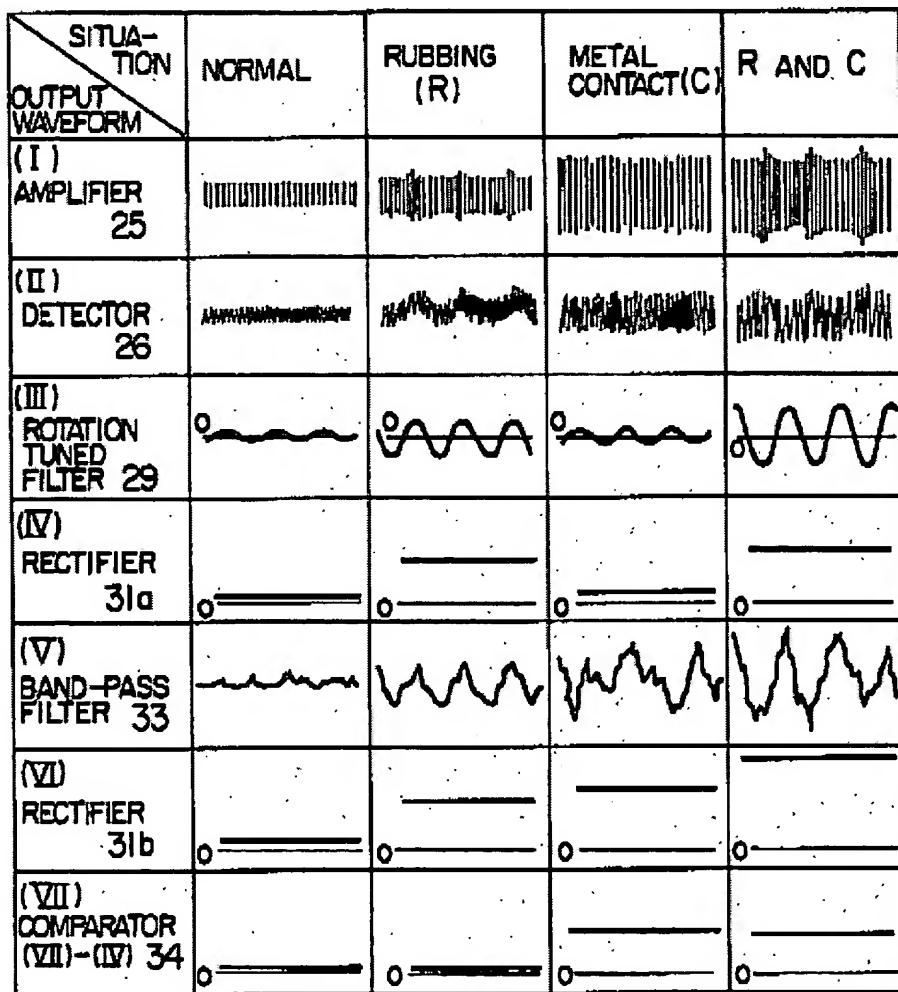
Regarding claim 51:

Sato discloses a system, comprising: a turbomachine (fig. 1, fig. 2, Col. 1, Lines 35-39); means for monitoring turbomachine conditions (fig. 2), and means for detecting whether a nub is occurring in the turbomachine (fig. 2).

Regarding claim 52:

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Sato discloses a system, comprising: a plurality of turbomachine Col. 1, Lines 35-39) sensors (fig. 1, unit 4a, 4b); and a nub detection system configured to monitor the plurality of turbomachine sensors and to detect a turbomachine rub event (fig. 2).

FIG. 9

Regarding claim 54:

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Sato discloses a system, comprising: a rub detection system configured to monitor operational parameters of a turbomachine and to detect a turbomachine rub event (Col. 1, Lines 35-39, fig. 2).

Regarding claim 56:

Sato discloses a method, comprising: analyzing turbomachine operational Col. 1, Lines 35-39) data to detect a rub event in the turbomachine (fig. 2).

Regarding claim 53, Sato further discloses the plurality of turbomachine sensors (fig. 1, unit 4a, 4b) are coupled to the turbomachine (fig. 1).

Regarding claim 55, Sato further discloses the rub detection system is coupled to the turrbomachine (fig. 1).

Regarding claim 57, Sato further discloses monitoring a turbomachine to obtain the operational data (fig. 1, unit 6b, 6a, fig. 2).

Regarding claim 58, Sato further discloses monitoring the turbomachine on-site (fig. 1, unit 14).

Regarding claim 60, Sato further discloses monitor in real time (Col. 3, Lines 34-37, fig. 1, unit 10b. 10a, 14, fig. 2).

Regarding claim 61, Sato further discloses detect rub event in real time with operation of the machine (Col. 3, Lines 34-37, fig. 1, unit 10b. 10a, 14, fig. 2, 9)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- a. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (U.S. Patent 4,478,082) in view of Turbine power systems conference (February 25-26, 2002).

Sato discloses a system including the subject matter discussed above except a server in communication with the on site monitor via an internet. Turbine power systems conference discloses a server in communication with the on site monitor via an internet (page 12), in order to update machine data easily in a remote location with minimal staff personnel (page 14, 12, 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify sato to have the server in communication with the on site monitor via an internet in order to update machine data easily in a remote location with minimal staff personnel.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for

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determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Sato and Turbine power systems conference are analogous art because they are from the same field of endeavor, detect condition of a turbo machine.

Response to Arguments

7. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. However, applicant's arguments filed 09/11/2006 have been fully considered but they are not persuasive.

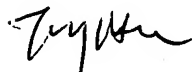
Contact information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269.

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The fax phone numbers for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tung S. Lau

AU 2863, Patent examiner

November 2, 2006